The Long-Distance Binding of the Chinese Reflexive Ziji

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Abstract
The long-distance binding of the anaphors in some languages has been a controversial issue for the past four decades. The binding property of the Chinese reflexive ziji represents one of the challenges in this research field, mainly because of the complicated features of the Chinese ziji itself and the ambiguous nature of the language. The present study sets out to synthesize the research results of the previous relevant studies from the syntactic and non-syntactic perspectives, trying to figure out their inadequacy. Base on that, the author makes suggestions on resolving the problem of Chinese long-distance binding.

Key words: Anaphor; Chinese reflexive; ziji; long-distance binding

INTRODUCTION

The 1980s has seen the development of the binding theory by Chomsky in a series of works. Despite a great consensus on major issues in this research field, there are a number of anomalies. Especially, the so-called long-distance binding feature of the anaphors in some languages has drawn researchers’ attention and has been one of the heatedly-discussed topics in the past three decades. The languages possessing such a binding property are not in a small number. For example, Finnish, Icelandic, Italian, and some oriental languages like Japanese, Korean and Chinese all contain anaphors that do not obey Chomsky’s binding theory. Though the anaphors in many of the long-distance bound languages are systematic in their behavior, Chinese anaphors seem to be especially complicated, and agreement on the binding rules of Chinese anaphors has not been reached so far even if the relative studies by different researchers have started since 1980s. Thus the long-distance binding of the anaphors has become a controversial issue for almost 40 years. The present study sets out to make some contribution to the binding rules of Chinese anaphor “ziji” based on the synthesis and analysis of some previous studies on this issue.

1. SOME BASIC CONCEPTS

This part will introduce some basic concepts related to the current study, the binding theory, long-distance binding, and Chinese anaphors.

1.1 The Binding Theory
Our starting point is the binding theory developed by Chomsky, which is also called the standard binding theory. (1) gives the formulation in Chomsky (1981).

(1) A. An anaphor is bound in its governing category.
B. A pronominal is free in its governing category.
C. A referring expression is free.

The definition of “governing category” is shown in (2).

(2) b is a governing category for a if and only if b is the minimal category containing a, a governor of a, and a SUBJECT(accessible to a).

Among the above three principles, as conditions B and C stipulate the principles of binding for pronouns and referring expressions respectively, they are not within our present study. So we will only consider the validity of condition A. It proposes the principle of binding for an anaphor, or a reflexive, that is, a reflexive must be bound in its binding domain. English reflexives like himself/
herself/themselves are bound in the local domain, i.e. the same clause. However, reflexives in some other languages do not always abide by condition A. The cross-linguistic variations in the binding domain will continue to be explored in the following part.

1.2 Long-Distance Binding

As is noted above, for anaphors in many languages condition A does not hold true. For instance, Japanese has an anaphor *zibun* which allows antecedent outside the governing category, as illustrated in the following sentence(as in (3)).

(3) Taro o wa [Hanako ga zibun o kirau] to omotte iru.
   (Taro Hanako self dislikes that thinks)
   (Meaning: Taro thinks that Hanako dislikes him.)

*Zibun* in the above sentence allows both Hanako and Taro to be its antecedents. When *zibun* takes Hanako as the antecedent, it conforms to condition A, as Hanako is within the local domain-the clause. But when *zibun* takes Taro as the antecedent, it violates condition A, for Taro as the matrix subject, is outside the governing category as stated in the binding theory by Chomsky. However in Japanese, taking an NP beyond the governing category (the local domain) is possible though it is not possible in English. Situations like this are called long-distance binding. Japanese is a long-distance bound language which allows an anaphor to take an NP outside the same clause as its antecedent. Some other languages such as Icelandic, Italian, Finnish, Korean and Chinese are also long-distance bound.

There are a number of studies of such non-clause-bounded reflexives in Icelandic, Italian, Finnish, Japanese, Korean and Chinese, etc. The studies on such a property led to some proposals to modify the standard binding theory (Manzini & Wexle, 1987). It is argued that the governing category should be redefined, as in (4).

(4) **b** is a governing category for **a** if and only if **b** is the minimal category containing **a**, a governor of **a**, and \( F(F \) an opacity factor).

The generally accepted definition of binding is given in (5).

(5) **a** binds **b** if and only if **a** and **b** are coindexed and a c-commands **b**.

Reuld and Koster point out that F may take values such as (accessible) SUBJECT, Tense, Agr, or Comp, with particular anaphors selecting different values, and different languages selecting different opacity factors. Anaphors with an opacity factor beyond the SUBJECT are classified as long-distance anaphors. However, opacity factors have arbitrary features, and in the absence of restrictions on opacity factors mean “virtually unlimited possibilities for anaphors to differ” (Reuland & Koster, 1991).

In the book *Long-Distance Anaphora* by Reuland and Koster(1991), the research on the long-distance anaphors in a number of languages such as Polish, Czech, Latin, Finnish and Chinese are introduced. For the first four languages, researchers seem to have made quite definite conclusions on the anaphoric domains. For Polish, there are two relevant binding domains. The local domain is the smallest maximal projection containing both the anaphor and a subject; the extended domain is the smallest maximal projection containing the anaphor and Tense. Anaphors and pronominals are in complementary distribution in the local domain, but not when across a subject. In Czech, the binding domain for the anaphors is the smallest maximal projection containing an accessible subject. Czech anaphors are all subject-oriented. The Latin anaphor *se* can at least be bound across subjects. And in local-context it can be bound by direct objects. It seems to go against the general pattern of long-distance anaphors which can only be bound by subjects. However, based on the fact that *se* can be bound by various tropicalized material, the researcher infers that in some uses *se* falls under the conditions on logophoricity rather than binding conditions in a strict sense. Another language, Finnish has two binding domains, which is similar to Polish: the smallest maximal projection containing the anaphor and a subject and the smallest maximal projection containing the anaphor and Tense. The local domain involves an anaphor and its antecedent, and long-distance binding involves the chain of elements linking the local domain to the domain of the antecedent.

By way of conclusion, the researchers identify the following properties of long-distance anaphor in the preceding studies (6):

(6) A. Long-distance anaphors allow an antecedent outside the governing category as defined in (2). (2): \( b \) is a governing category for \( a \) if and only if \( b \) is the minimal category containing \( a \), a governor of \( a \), and a SUBJECT (accessible to \( a \)).

B. The antecedents of long-distance anaphors are subject to a more restrictive prominence condition than c-command. The most common requirement is that the antecedent must be a subject.

C. Long-distance anaphors are restricted to reflexives. Reciprocals are not allowed as long-distance anaphors.

D. Long-distance anaphors are morphologically simplex. Morphologically complex anaphors are local.

E. Outside the local domain there is no complementarity between pronouns and anaphors.

However, not all the above properties are applicable to the Chinese reflexive *ziji*, which allows both local and long-distance binding. Many researchers believe that anaphors in adjunct clauses in Chinese should be further investigated. This issue is considered as one of the challenges for the research field.

1.3 Chinese Anaphors

Chinese anaphors or reflexives can be divided into two main categories: the simple or bare reflexive and the complex reflexives. There is only one bare reflexive in Chinese, *ziji*, and several complex reflexives, which are in the form of “pronoun+*ziji*”. It is usually believed that the
complex reflexives are much like the English reflexives in binding properties. Whereas the bare reflexive, though simple in the form, possesses very complicated binding rules or anaphoric principles, on which researchers have not reached ultimate consensus after almost four decades of study.

The Chinese bare reflexive ziji exhibits unique properties that do not appear in its English counterparts. Firstly, ziji can have its antecedent not only in the governing category as defined by the standard binding theory but also outside the local domain. In other words, ziji allows both local binding and long-distance binding. Secondly, in terms of anaphoric reference, ziji demonstrates the feature of subject orientation, i.e., ziji is usually co-indexed with the subject but rarely co-indexed with the object. Thirdly, the blocking effect arises when the intervening subject has different agreement features among several potential antecedents. Fourthly, if the potential binder is inanimate, ziji will take its modifier which is animate to be its antecedent. This is the sub-command feature of ziji. Finally, ziji can appear in the subject position of the clause (whereas English reflexives cannot act as subjects). These phenomena have become the research issues by scholars home and abroad. The following part will introduce some influential studies on the Chinese reflexive ziji.

2. SYNTACTIC STUDIES ON BARE REFLEXIVE ZIJI

The properties in the long-distance binding of the Chinese reflexive are of great interest of linguists, and for decades they have been attempting to interpret the long-distance binding features of the Chinese reflexive. The relative studies can be classified into two main groups, syntactic studies which are done on a formalist basis and tried to make some modification to the standard binding theory, and non-syntactic studies which adopt semantic-discourse-pragmatic perspective.

The well-known syntactic studies on the Chinese reflexive conducted by overseas researchers include Anaphoric Pronoun Analysis, Parameterization Analysis, LF movement Analysis and Relativized Subject Analysis. Hu’s (1998) article Syntactic Studies on Chinese Long-distance Reflexivization reviews these influential syntactic studies, and the following is the summary of his review.

2.1 Anaphoric Pronoun

Wang et al. (Wang & Stilling, 1984; Mohanan, 1982) argue that ziji does not belong to any of the three categories of NP, i.e. it is not an anaphor, a pronominal, or an R-expression. Ziji should belong to a new category of NP which is called anaphoric pronoun by Wang et al. Anaphoric pronoun, which also possesses the feature of [+anaphor, +pronominal], is the overt counterpart of PRO. To account for the binding property of anaphoric pronouns, a new principle of the binding theory named Condition D should be set, as argued by Wang et al. Based on Condition D, ziji should be bound in the whole governing category dominated by the subject of the root clause.

However, this analysis is considered to have serious theory-internal deficiency by Chen Ping and Huang Yan (Chen, 1992; Huang, 1994). According to the Government and Binding theory, PRO has the feature [+anaphor, +pronominal]. Thus it must abide by Condition A and Condition B of the binding theory, that is, it must both be bound and free in its governing category. As this is a contradictory condition, to solve the contradiction, GB sets the PRO theorem: PRO cannot be governed. Since the overt counterpart of PRO should also have the feature [+anaphor, +pronominal], so it should also be unbound. If ziji is the overt counterpart of PRO, it should not be governed, either. However, if ziji is unbound, it will not be assigned case, thus will not abide by the case filter theory which stipulates that every overt NP must be assigned an abstract case. Thus under the framework of the GB theory, there is no such an element as the overt counterpart of PRO. So to set a new category of NP, we must make great modification to the GB theory, which is obviously unworkable.

2.2 Parameterization

Manzini and Wexler (1987) believe the necessary condition that an anaphor is bound in the governing category should be valid for all the languages. The concept of governing category for different languages can be parameterized with a subset principle. They have made some modification to the governing category in the standard binding theory. The governing parameters they put forward are given in (7).

\[(7) γ \text{ is a governing category for } α \text{ if and only if } γ \text{ is the minimal category that contains } α \text{ and a governor for } α \text{ and has}
\]

a) a subject; or
b) an Infl; or
c) a Tense; or
d) a “referential” Tense; or
e) a “root” Tense.

They argue that different languages can choose different parameter values. For example, English chooses a) a subject for its governing category, while Chinese chooses e) a “root” Tense. This is because English reflexives must be bound in the local domain-the minimal category containing the anaphor itself, its governor and an accessible subject, whereas the Chinese reflexive ziji has the maximal governing category, as it can be bound both locally and from a long distance in a “root” clause. So in terms of governing category, Chinese is more inclusive than English. Thus English has the parameter value that is a subset to the parameter of Chinese.

However, the analysis of Parameterization also has some deficiencies, just as Kang (1998), Battistella &
Xu(1990), Cole & Sung(1994) and Huang Y.(1994) point out. First, this analysis cannot account for the feature of subject-orientation of the Chinese reflexive. If adopting this approach to define the governing category for Chinese, all the NPs that c-command the anaphor can act as the antecedents of \textit{ziji}, that means the object is also allowed as the antecedent, which will pose a problem on the subject-orientation of the Chinese reflexive. Second, Parameterization Analysis cannot solve the problem of “blocking” effect in Chinese, as illustrated in the following example (Hu, 1998):

(8) 张三说我(常批评自己)走。
In the above sentence, among the three accessible subjects, only Lisi(李四) is the antecedent of \textit{ziji}. But according to Parameterization Analysis, the governing category is the root clause, all the three subjects can be the antecedents, then why cannot the other two? This is a question that cannot be accounted for by Parameterization Analysis.

A third problem in Parameterization analysis is that it has in effect made the governing category unnecessary since it states that the root clause is the governing category for some language, e.g. Chinese(Kang, 1998; Huang, 1994). Besides, it cannot explain why different languages have different governing categories.

2.3 LF Movement

LF movement is developed from different perspectives by researchers such as Battistella(1989), Cole(Cole, Hermon & Sung 1990), Huang & Tang(1991). All these studies share the common idea that the long distance binding of Chinese reflexive \textit{ziji} is driven by its convert successive-cyclic movement on LF level, though they differ on how to realize such LF movements.

Battistella (1989) regards complex reflexives as complete NPs and bare reflexive \textit{ziji} as N^0 which is a head. Thus at LF level, \textit{ziji} can first move into INFL and then conduct INFL-to-INFL successive-cyclic movement. According to Battistella, all the traces left by \textit{ziji} during the movement as well as \textit{ziji} itself must be in agreement with their local subjects, so all the subjects, local or non-local, must agree with \textit{ziji} in terms of person and number. Therefore Battistella’s LF movement can account for the features of long distance binding and subject-orientation of \textit{ziji}.

Cole, Hermon & Sung (1990) argue that the head movement should abide by Empty Category Principle. Based on Battistella’s study, they consider the long distance binding of \textit{ziji} as the result of INFL-COMP-INFL movement at LF. They claim that English INFL is functional whereas Chinese is lexical. The lexical INFL can L-mark (lexical-mark) VP and CP which therefore cannot constitute barrier, and so \textit{ziji} can move at LF level.

Huang and Tang (1991) perceive the LF movement of \textit{ziji} as an A’ movement by IP adjunction. They point out that one deficiency in Battistella’s analysis is that it does not explain why complex reflexives of Chinese cannot conduct successive-cyclic LF movement. Huang & Tang argue that both complex and bare reflexives can make LF movement by IP adjunction. They explain the motivation of their movement. As all NPs must have φ-feature and r-feature, yet complex reflexives in Chinese lack r-feature and bare reflexive \textit{ziji} lack both features, so to gain the features, the reflexives have to move. For bare reflexive \textit{ziji}, it must first be licensed by obtaining φ-feature from its antecedent at S-structure and then obtain r-feature at LF. So long-distance binding may occur. As for complex reflexives, because they have inherent φ-feature which cannot change at LF, so they cannot have long-distance binding.

Though the above LF movement analysis can explain some features of the reflexive \textit{ziji}, every single analysis has their own problem. For every analysis, counter evidence is provided by succeeding researchers. For instance, Battistella (1989) and Cole et al. (Cole, Herman & Sung, 1990; Cole & Sung, 1994) argue that the blocking effect in the long-distance binding is caused by the disagreement in person of the subjects, however the disagreement of person does not necessarily cause blocking effect, as seen in the following example:

(9) 他,怕我超过自己。(Xu, 1993)

The local subject wǒ(我) does not agree with the subject of the root clause ta(他) in person feature, but it does not block the referential relation between ziji and ta.

For Huang and Tang’s analysis, there also exist unexplainable examples, such as

(10) 张三以为李四会把他领回自己家的。(Cole & Wang, 1996)

Ni(你) is the closest potential antecedent of \textit{ziji}(自己), so \textit{ziji} obtains φ-feature of the second person. According to Huang & Tang(1991), its second person φ-feature will prevent \textit{ziji} from co-referring with the first or the third person pronouns, but in the above example \textit{ziji} is ambiguous, which can refer with all the three NPs, Zhangsan(张三), Lisi(李四) or Ni(你).

2.4 Relativized Subject

Relativized Subject Analysis, which is done from a non-movement perspective, is proposed in Progovac(1991, 1992) and Progovac & Frank(1992) and further modified by Tang(1994; see also Hu, 1998). Progovac and Frank make modification to Principle A of Chomsky’s binding theory using the concept of relativized Subject. The assumption is given in (11).

(11) A. A reflexive R must be bound in a D category that contains an R and a Subject.

a. X is a subject of an X^0 reflexive if and only if X is a zero-level category(e.g. AGR);

b. X is a subject of an XP reflexive if and only if X is a projection of an XP(e.g.[NP, IP] and [NP, NP]).

B. The only subject of X^0 reflexive is X^0 subject, i.e. AGR.

X^0 reflexive in the above principle is a bare reflexive,
and XP is a complex reflexive. According to Progovac’s principle, the subject of the bare reflexive is \( X^0 \), i.e. AGR, while the subject of the complex reflexive is XP. The \( X^0 \) reflexive expands its governing category to the first \( X^0 \) of the sentence and co-indexes with the AGR, while the XP reflexive expands its governing category to the first XP subject of the sentence. Progovac(1991,1992) holds that Chinese has abstract anaphoric AGR, though without morphological one. For Chinese, all the AGRs in a sentence form a co-indexed chain, thus the governing category of \( X^0 \) will expand to the root clause. That is why the \( X^0 \) reflexive can have long-distance binding and is usually subject-oriented. But for the XP reflexive, its governing category cannot expand in this way, because its governing category is defined not through the head (AGR) but through XP(spec of AGR). Thus XP reflexives cannot have long-distance binding.

Tang further develops the assumption by claiming that if all the functional heads(including not only AGR but also MOD, i.e. modifiers) have the same anaphoric \( \phi \)-feature, they can be in the co-indexed chain. If a certain functional head in the chain does not have the anaphoric \( \phi \)-feature, the long-distance binding of the \( X^0 \) reflexive will be blocked.

However, Relativized Subject analysis is criticized by Pan(1997), Cole & Wang(1996) and Hermon(1994), with examples as given in (12).

(12) 我知道李四, 书害了自己 ziji.

In the above sentence, ziji can refer with both wo(我) and Lisi(李四). Relativized Subject Analysis cannot explain why the long-distance binding of ziji is not blocked in the above sentence.

### 3. NON-SYNTACTIC STUDIES

The studies on the long-distance binding of ziji in last century are mostly done within the framework of the binding theory. However, they cannot fully account for the problems in the long-distance binding of the Chinese reflexive, though each of them may solve some of the problems to some degree. So starting from the last decade of last century, some researchers resort to the non-syntactic approach, attempting to resolve the mysteries of the long-distance binding reflexive.

The overseas scholars who have studied the Chinese reflexive ziji include Chen Pin(1992), Xu Liejiong(1993, 1994), Huang Yan(1991,1994) and Pan Haihua(1995, 1997). Chen(1992) does the research from a functionalist perspective. He argues that it is the prominence of the topic represented by the antecedent rather than the syntactic relation between ziji and its antecedent that determines the reference of the Chinese reflexive. However the meaning of the prominence of the topic is not easy to define, thus Chen’s theory cannot account properly for blocking effect of the long-distance binding. Xu proposes the thematic hierarchy theory to determine the reference of ziji when there are several potential antecedents, but the similar problem also exists in this theory. Huang(1991, 1994) proposes a pragmatic model for anaphors with pragmatic approach, which still cannot solve the binding problem of the reflexive. The theory put forward by Pan(1995, 1997) is called the self-ascription theory. It develops the notions of prominence and self-ascription, which are very important in determining the antecedent of ziji, and it also proposes that the long-distance reflexive is a self-ascribed reflexive. According to the self-ascription theory, every NP with the feature of [+Prominence] will be the possible antecedent of ziji, if no blockers to intervene. The principle of prominence plays an important role in the search of antecedent for ziji. Blockers are the most prominent intervening NP. When there is no difference in the feature of prominence between two NPs, closeness will determine which is more prominent.

The issue of the reflexive ziji also arouses considerable interest of the researchers in China. Domestic studies can be roughly classified into three groups according to their research perspectives, i.e. comprehensive studies, lexical studies and pragmatic studies. Comprehensive studies usually adopt a semantic-pragmatic-discourse based approach to explore the binding and anaphoric problems of ziji(Pan & Hu 2002; Zhang, 2002; Nan, 2002; Zeng 2006; Zeng & Zhao, 2008). Lexical studies include two types. One type is the research on the verbs(predicate) (Wang, 1995; Jin, 2003; Li, 2008) which claims that the verb in the governing domain would exert some influence on the binding of ziji. Another type of lexical studies examines the nature of ziji itself either from etymology to explore its origin or by comparative study to investigate its distinctiveness and similarities with English anaphors(Cheng,1994; Zhang, 2008). Pragmatic studies adopt the pragmatic approach to explore the referential problem of ziji(Sui, 2003; Liu, 2007). Examining the above studies, we observe a turn from syntactic framework to non-syntactic one since this century. However, like syntactic studies, so far not a single non-syntactic assumption or theory can account for the long-distance binding of the reflexive ziji in a proper way.

### CONCLUSION

For principles or theories proposed by each study, syntactic or non-syntactic, there seem to be counter examples to prove them the other way. The fact that researchers cannot come to consensus even on the major problems in this issue is undoubtedly derived from the complicated features of the Chinese ziji itself and the ambiguity nature of the language as well. On this issue, I believe the following problems should be the more fundamental ones. 1. What is the nature of ziji, an anaphor, an anaphoric pronominal, or else? And how should we classify different kinds of ziji to adapt to our research? 2. How to determine the antecedent of ziji? 3.
How to account for the problem of blocking in the long distance binding of *ziji*

As for the solution to the problems, my suggestion is to employ a semantic-discourse-pragmatic approach, because the binding of *ziji* is not a mere syntactic problem due to the ambiguous nature of Chinese. To determine the reference of *ziji*, semantic of the predicate and context (or discourse) play an important role. In addition, we can conduct comparative studies with other languages, with languages possessing similar features with Chinese, e.g. Japanese which is also an ambiguous language containing long-distance binding reflexive. The comparative studies may provide hints for the study of Chinese reflexives. Finally, when determining the antecedent of *ziji*, we should figure out the situations and conditions for blocking to occur. As the preceding studies indicate when researchers try to formulate some binding principles, there are always counter evidence. Since no principle is so inclusive to cover all the conditions for the binding of *ziji*, I suggest we focus on the conditions blocking the long-distance binding. That is to say, instead of stipulating what is “legitimate”, we should specify what is “illegitimate”.

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